



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,661	08/28/2003	Shigeki Imai	0756-7191	6925
31780	7590	10/29/2008	EXAMINER	
ERIC ROBINSON PMB 955 21010 SOUTHBANK ST. POTOMAC FALLS, VA 20165			CHU, CHRIS H	
			ART UNIT	PAPER NUMBER
			2874	
			MAIL DATE	DELIVERY MODE
			10/29/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/649,661	Applicant(s) IMAI ET AL.	
	Examiner CHRIS H. CHU	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

The prior art documents submitted by applicant in the Informational Disclosure Statement filed on November 19, 2003 have all been considered and made of record (note the attached copy of form PTO-1449).

Drawings

Ten (10) sheets for formal drawings were filed August 28, 2003 and have been accepted by the Examiner.

Specification

Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

In claims 1, 10, 19 and 28, the word "external" needs to be followed by some type of noun which describes where the optical signal is input from. For the purposes of examination, "external device" will be used in said claims.

In claim 28, the limitation "wherein said optical sensor is configured with a plurality of different semiconductor layers and controlled by thin film transistors formed with semiconductors which are different from each other, respectively" is unclear. It is unclear whether the semiconductive materials of the sensors are different from those of

the TFTs or if the TFTs are comprised of different types of semiconductive materials.
For the purposes of examination, the latter interpretation is taken.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 8-10, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Shannon (5,268,679).

Regarding claims 1 and 10, Shannon discloses an electronic circuit device (100 in Fig. 2) comprising an electronic circuit substrate (10 in Fig. 2) over which an optical shutter (31 in Fig. 3) and an optical sensor (34 in Fig. 3) are disposed, said electronic circuit substrate comprising a transparent substrate; and an electronic circuit including a plurality of laminated thin film transistors (32 in Fig. 3) formed over said transparent substrate, wherein an optical signal (O in Fig. 2) is inputted from an external device, said inputted optical signal is inputted into said optical shutter or said optical sensor; and wherein said optical shutter controls transmission or non-transmission of said optical signal, and said optical sensor converts said optical signal into an electronic signal using said optical sensor and said electronic circuit over said transparent substrate in column 5, lines 1-42.

Regarding claims 8 and 17, Shannon discloses the shutter comprising a liquid crystal sandwiched between two transparent substrates in Fig. 2 and column 5, lines 1-4.

Regarding claims 9 and 18, Shannon discloses a polarizing plate (39 in Fig. 2) disposed over the transparent substrate and nearby the shutter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-7, 11-16 and 19-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon (5,268,679).

Regarding claims 6, 7, 15, 16, 19, 24 and 25, Shannon teaches the claimed invention except for specifically stating the optical sensor to be an amorphous silicon photodiode, an amorphous silicon phototransistor, a polysilicon photodiode or a polysilicon phototransistor. However, all of these types of optical sensors are well known in the art, and as such, one having ordinary skill in the art at the time of the invention would have found it obvious to use any type of sensor including the claimed sensors depending on the cost and performance of the sensors. Further, it is well

Art Unit: 2874

known that all of these types of optical sensors comprise different semiconductive layers.

Regarding claim 26, Shannon discloses the shutter comprising a liquid crystal sandwiched between two transparent substrates in Fig. 2 and column 5, lines 1-4.

Regarding claim 27, Shannon discloses a polarizing plate (39 in Fig. 2) disposed over the transparent substrate and nearby the shutter.

Regarding claims 2-5, 11-14 and 20-23, Shannon teaches the claimed invention except for specifically stating the thin film transistors (hereafter referred to as TFTs) crystallized by a heat treatment using a metal catalyst or by irradiating a laser beam. However, both of these methods of effecting crystallization of the semiconductor layer of TFTs are well known in the art, and as such, one having ordinary skill in the art at the time of the invention would have found it obvious to use method including the claimed methods in any of the layers of TFTs depending on the production cost and reliability of the processes.

Regarding claim 28, Shannon teaches the claimed invention except for specifically stating the TFTs formed with semiconductors which are different from each other. However, it well known in the art that standard TFTs are formed with different semiconductive materials, and as such, one having ordinary skill in the art at the time of the invention would have found it obvious to use such standard TFTs since they are easy to manufacture and use.

Regarding claims 29-32, Shannon teaches the claimed invention except for specifically stating the thin film transistors (hereafter referred to as TFTs) crystallized by a heat treatment using a metal catalyst or by irradiating a laser beam. However, both of these methods of effecting crystallization of the semiconductor layer of TFTs are well known in the art, and as such, one having ordinary skill in the art at the time of the invention would have found it obvious to use method including the claimed methods in any of the layers of TFTs depending on the production cost and reliability of the processes.

Regarding claims 33 and 34, Shannon teaches the claimed invention except for specifically stating the optical sensor to be an amorphous silicon photodiode, an amorphous silicon phototransistor, a polysilicon photodiode or a polysilicon phototransistor. However, all of these types of optical sensors are well known in the art, and as such, one having ordinary skill in the art at the time of the invention would have found it obvious to use any type of sensor including the claimed sensors depending on the cost and performance of the sensors.

Regarding claim 35, Shannon discloses the shutter comprising a liquid crystal sandwiched between two transparent substrates in Fig. 2 and column 5, lines 1-4.

Regarding claim 36, Shannon discloses a polarizing plate (39 in Fig. 2) disposed over the transparent substrate and nearby the shutter.

Conclusion

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

Art Unit: 2874

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris H. Chu whose telephone number is 571-272-8655. The examiner can normally be reached on 8:30 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general or clerical nature should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562.

Chris H. Chu
/Chris Chu/
Patent Examiner
October 22, 2008

/Michelle R. Connelly-Cushwa/
Primary Examiner, Art Unit 2874